

^{190}Pt α decay **1963Gr08,2011Be08**

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia	NDS 183,1 (2022)	1-Mar-2022

Parent: ^{190}Pt : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=4.97\times 10^{11}$ y 16; $Q(\alpha)=3268.6$ 6; % α decay=100

^{190}Pt - $T_{1/2}$: From adopted value in the ENSDF database. Discrepant $T_{1/2}$ data in the literature: 6.65×10^{11} y 28 (1987Al28), 5.4×10^{11} y 6 (1963Gr08), 6.9×10^{11} y 5 (1961Ma05), 3.2×10^{11} y 1 (1997Ta33), 4.7×10^{11} y 17, (1961Pe23), 10 y (1954Po24), 6.8 y (1961Gr37). The source of discrepant values is not clear. Evaluators choose 2017Br04 value because of agreement with geological methods as compiled and evaluated by 2006Ta01.

Adapted/edited the XUNDL dataset Compiled by M. Birch and B. Singh (McMaster), August 6, 2011.

2011Be08: Measured alpha decay of a natural Pt sample by detecting γ rays using a low-background HPGe detector in the underground conditions of Gran Sasso National Laboratories (LNGS) of the INFN (Italy).

 ^{186}Os Levels

E(level)	J^π	$T_{1/2}$
0.0	0^+	2.0×10^{15} y 11
137.1 1	2^+	868 ps 12

 α radiations

Others: 1961Pe23, 1986AlZT, 1966Ka23, 1961Ma05, 1961Gr37, 1956Po16, 1954Po24, 1953Po01.

Theoretical (α -decay rates): 1989Ch23, 1971Ca43.

E_α	E(level)	$I_\alpha^\ddagger$	HF †	Comments
(3038)	137.1	0.25 4	13	I_α : Decay branch observed by 2011Be08 through the observation of 137-keV γ ray from ^{190}Pt decay. Partial half-life = 2.6×10^{14} y 4.
3175 14	0.0	99.75 4	1	E_α : Weighted average of 3180 20 (1963Gr08) and 3170 20 (1961Pe23). Others: 1987Al28 (3190 100), 1966Ka23, 1961Gr37, 1961Ma05 (3110 30), 1956Po16. Adopted E_α corresponds to $Q(\alpha)=3243$ 14, cf. 3286.6 6 from 2021Wa16.

† $r_0=1.4651$ 16 from 2020Si16 if HF=1.0 for α to g.s.

‡ Absolute intensity per 100 decays.

 $\gamma(^{186}\text{Os})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
137.1 1	137.1	2^+	0.0	0^+	E_γ : from 2011Be08.

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Decay Scheme

